Earth Systems
Environmental Engineering

October 24, 2022

***Via Email/Sharefile***

Mr. Sam Abdellatif
Land and Redevelopment Programs Branch
US Environmental Protection Agency Region 2
290 Broadway, 25th Floor
New York, New York 10007-1866

**Re: Response to AOC 12 – Smith Creek & Detention Basin Comment Letter (02/11/2022)**
**Hess Corporation Former Port Reading Complex (HC-PR)**
**750 Cliff Road**
**Woodbridge, Middlesex County, New Jersey**
**NJDEP PI# 006148**
**ISRA Case No. E20130449**
**EPA ID No. NJD045445483**

Dear Mr. Abdellatif:

Earth Systems, Inc. (Earth Systems) has prepared this letter on behalf of Hess Corporation (Hess) regarding the February 11, 2022 comment letter and April 27, 2022 site visit regarding the July 30, 2021 AOC 12 – Smith Creek and Detention Basin Supplemental Remedial Investigation Workplan (RIW).

At this time, we do not anticipate submitting a revised Supplementary RIW and will conduct the additional sampling discussed in this comment letter as part of the ongoing Remedial Investigation (RI) of AOC 12.

## NJDEP Comments & Earth Systems/Hess Responses

**NJDEP Comment 1:** The RI workplan is missing important information necessary to determine if the sample locations selected are appropriately addressing the contaminant migration pathways. Pursuant to N.J.A.C. 7:26E-4.8, this is the first step to start the remedial investigations. There are additional areas that need thorough sampling, as

indicated in the following comments. The Remedial Investigation Report will need to address all the comments and adequate justification will need to be provided. If specific comments will be addressed in the RIR report, please indicate this in an official response to comments. Once the RIR is reviewed, the Department may request additional sampling and documentation in order to achieve complete delineation.

**Earth Systems/Hess Response 1**: We are confused by the statements that the "RI workplan is missing important information necessary to determine if the sampling locations selected are appropriately addressing possible contaminant migration pathways" and that "there are additional areas that need thorough sampling." All work conducted, including the sampling locations, was based on an approved Remedial Investigation Workplan. As part of the approval of that plan, there were several rounds of written correspondence and meetings. It was a long, but cooperative, process to obtain approval for the initial workplan. This supplemental workplan proposes additional delineation samples based on the results of the RI activities that were conducted in accordance with the approved initial workplan.

Hess will include a full discussion of all analytical results, investigation observations, and contamination migration pathways in the final RIR for AOC 12. Since all proposed RIW work has been given prior approval by the NJDEP, we do not, at this time, anticipate that additional sampling would be necessary once the RI fieldwork is complete and the final RIR is reviewed by the NJDEP.

In the interim, if NJDEP believes that the above workplans and approval process failed to include or consider "important information," please provide, as soon as possible, a more detailed description of the missing information.

**NJDEP Comment 2:** Please note that sampling, including field sampling, and lab analyses needs to be conducted pursuant to the current Department Regulations and associated Technical Guidance documents.

**Earth Systems/Hess Response 2**: All sampling will be conducted pursuant to NJDEP regulations and associated technical guidance documents unless otherwise noted. If a deviation is required, the deviation will be cited in the report.

**NJDEP Comment 3:** It is recommended that all historic correspondence identified in Section 1 of the 2020 AOC 12: Supplemental Remedial Investigation Workplan be provided as an appendix to this RIW for transparency.

**Earth Systems/Hess Response 3**: Historic correspondence will be uploaded as an appendix to the RIW in the Earth Systems portal.

**NJDEP Comment 4:** Page 8, Section 3.1, Identification of Applicable Standards: Hess is reminded that on May 17, 2021, the Department adopted amended Remediation Standards, see https://www.nj.gov/dep/srp/guidance/rs/. Regarding Hess's Identification of Applicable Standards, Hess shall utilize the May 17, 2021, Remediation Standards, in accordance with the Rule and associated Guidance's, including but not limited to the Phase-In/Order of Magnitude Guidance, which is found on the same weblink. As a reminder, Area of Concern 12 has not received a final remediation document. Therefore,

Hess will need to compare the prior and future site data to the May 2021 Remediation Standards.

Regarding the Migration to Groundwater Pathway, the migration to groundwater standards are applicable in the vadose zone. It is not acceptable, without corresponding data at each sample location, for Hess to have assumed that the vadose zone throughout Area of Concern 12 is 4 feet below ground surface.

**Earth Systems/Hess Response 4**: Analytical results will be evaluated utilizing the May 17, 2021 standards going forward. Individual soil sampling locations will be evaluated to determine the depth of the unsaturated zone. However, as previously discussed, soil in areas adjacent to the detention basin and Smith Creek tend to be saturated from the surface down. Thus, it is unlikely that there will be an unsaturated zone from which Hess can collect soil samples. As per the *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria Guidance Document (Version 2.0, July 2021)*, the migration to groundwater pathway is only to be delineated with the unsaturated zone.

**NJDEP Comment 5:** Page 31, Section 6.0, Historic Fill: The document includes a discussion of attributing PAHs and metals to historic fill. As previously discussed, contaminants of concern cannot be attributed to historic fill without sufficient evidence. Hess has noted that a historic fill evaluation document will be submitted in the future. At this time, contaminants attributed to historic fill cannot be accepted because justification has not been provided.

**Earth Systems/Hess Response 5**: A historic fill report will be submitted in the future. With respect to the attribution of contaminants to historic fill, we suggest that, to avoid a protracted review and comment process, NJDEP and Hess representatives meet to discuss what evidence should be included in the historic fill evaluation to provide the appropriate justification.

**NJDEP Comment 6:** The RIW does not include enough information to characterize ground water and surface water interaction. The following information is requested:

a. Surveyed staff gauges in Smith Creek Pond and Smith Creek.

**Earth System/Hess Response 6a** – There are currently (3) gauges in Smith Creek. However, due to tidal fluctuations, the surface water in these features is frequently too low to record a measurement, even when it is not low tide (i.e. the surface water features are dry). Readings will be collected during high tide and included on future contour maps. The stream gauge is in the process of being replaced in Smith Creek Pond. Once replaced, it will be surveyed and measurements recorded when water is present at a sufficient volume in the pond.

b. Sampling of ground water and Smith Creek Pond and Smith Creek surface water at peak low tide (which should be primarily ground water discharging to surface water).

**Earth System/Hess Response 6b** – As part of the RI, additional rounds of groundwater samples will be collected from wells adjacent to AOC 12. A round of groundwater sampling will be scheduled to coincide with low tide. Please note that surface water samples cannot be collected at low tide since there is not sufficient surface water present to collect the sample.

c. Additional synoptic gauging at peak high tide and peak low tide for ground water-surface water interaction evaluation.

**Earth System/Hess Response 6c** – As part of the RI, additional rounds of gauging will be conducted during various tidal stages. This information will be provided in the final RIR.

d. Tidal influence evaluation at off-site SC-, and perimeter area PER- and AB-wells (at a minimum).

**Earth System/Hess Response 6d** – As requested, these specific wells will be included in the next tidal study and the results documented in the final RIR.

e. Synoptic surface water and ground water gauging prior to any surface water, ground water and sediment gauging and sampling event.

**Earth System/Hess Response 6e** – Earth Systems continues to follow a procedure of conducting gauging activities prior to a groundwater sampling event. As part of the RI, gauging will also be conducted prior to the collection of sediment or surface water samples.

f. Evaluation of vertical gradients at well clusters and between ground water and surface water.

**Earth System/Hess Response 6f** – Vertical gradients and groundwater to surface water interaction will continue to be evaluated as part of the RI for AOC 12. All observations will be included in the final RIR.

g. Williams and Buckeye Pipeline construction (invert elevations) information to evaluate them as preferential plume migration path.

**Earth System/Hess Response 6g** – The invert of the pipelines is assumed to be between 3 and 5 feet below grade. As additional data is collected, all potential preferential pathways will continue to be evaluated and addressed.

Prior to conducting any invasive investigative activities, a call is placed to NJ One Call and pipeline representatives will frequently meet field staff onsite. Any information obtained from the pipeline representatives is logged and field maps updated, as needed. In addition, a GPR survey is also conducted to determine information regarding pipeline depths, inverts, and pathways. Field notes and maps are also updated based on the results of the GPR survey. All pipeline information collected as part of the RI will be included in the final RIR for this AOC group.

h. The location of the Urban Sewer through the Hess site and adjacent area(s) to Smith Creek Pond with construction information.

**Earth System/Hess Response 6h** – Minimal construction information is available regarding the urban sewer. We know approximate invert depths in various locations due to GPR surveys and site observations. Any information regarding the urban sewer obtained during RI activities will be included in the final RIR.

**Earth Systems/Hess Response 6**: See above.

**NJDEP Comment 7:** Characterize potential ground water contaminant migration from the Truck Loading Rack Remediation Management Unit (RMU) to the Detention Basin. Please note, surface water elevations at the Detention Basin were not always higher than ground water elevations.

a. Current sample locations are around potential plume discharge zones. Additional sample locations are needed within these areas (see CSM shallow aquifer isopleths for TR-3RR, TR-4R, TR-5 and TR-6 data; 2012 AOC 10 RIW temporary well isopleths). Passive diffusion bag and/or trident probe sampling in the near shore discharge areas is recommended.

**Earth System/Hess Response 7a** – Please confirm that the NJDEP is requesting additional groundwater samples from the AOC 10 monitoring wells specified above or is the NJDEP requesting additional monitoring well locations.

A round of groundwater samples will be collected from the wells specified above utilizing passive diffusion bags as part of the RI. Analytical results will then be documented in the final RIR.

b. Evaluate preliminary AOC 10 RI data to help determine if there is shallow ground water COC migration around the Detention Basin due to higher surface water elevations. Deeper plume migration represented on CSM isopleths is evident and may be due to lithology or increased vertical gradients in proximity to the Detention Basin.

**Earth System/Hess Response 7a** – Groundwater results continue to be evaluated in the vicinity of the detention basin for all depth intervals. Groundwater results and plume information will be included in the final RIR.

**Earth Systems/Hess Response 7**: See above.

**NJDEP Comment 8:** Include the following information on site figures with Detention Basin sample locations. It should be noted that figures from the Envirotrac's 4th quarter 2014 progress report dated November 13, 2014, are good examples of complete figures (specifically Figure 6).

a. VOC, SVOC and PCB hot spots shown on CSM figures.

**Earth System/Hess Response 8a** – The requested figures will be updated and provided with the final RIR.

b. Historic and current LNAPL recovery areas.

**Earth System/Hess Response 8b** – The requested information will be included on the figures included with the final RIR.

c. 1979 crude oil release impact area limits.

**Earth System/Hess Response 8c** – The requested information will be included on the figures included with the final RIR.

d. 1991 API Separator release to Detention Basin.

**Earth System/Hess Response 8d** – The requested information will be included on the figures included with the final RIR.

e. Historic LNAPL impacts identified in soil borings, monitor well borings, temporary wells, etc.

**Earth System/Hess Response 8e** – The requested information will be included on the figures included with the final RIR.

f. Historic and current point source discharge and withdrawal locations from Detention Basin and discharge points to Smith Creek Pond.

**Earth System/Hess Response 8f** – The requested information will be included on the figures included with the final RIR.

g. Appendix E – The Photo 3 location is needed on site figures (outfall along northwestern shoreline of Detention Basin)

**Earth System/Hess Response 8g** – The location of Photo 3 is identified on **Figure 1 (**attached**)**. A photo location map will be included with the final RIR. In addition, an updated photo of the specified location will be included on a figure in the final RIR.

h. Appendix E – The Photo 5 location is needed on site figures (southwestern portion of site outfall to urban sewer not connected to detention basin; "outfall leads to Smith Creek Pond".

**Earth System/Hess Response 8h -** The location of Photo 5 is identified on **Figure 1 (**attached**)**. A photo location map will be included with the final RIR. In addition, an updated photo of the specified location will be included on a figure in the final RIR.

**Earth Systems/Hess Response 8**: See above.

**NJDEP Comment 9:** Please provide a historic sample summary figure identifying boring, temporary well and sample locations within the entire 1969 crude oil release impact area. EnvirTrac soil boring and temporary wells in the Truck Loading Rack RMU and Southern

Remediation Management Unit need to be shown, at a minimum. LNAPL observation locations should be considered in AOC 12 sample locations if ground water flow conditions are toward a surface water body, as well as soil and ground water impacts.

**Earth Systems/Hess Response 9**: The requested historic information was included with the initial workplan (August 17, 2016) and/or RTC documents (October 25, 2017) relating to the original 2016 workplan. The Supplementary RIW (July 30, 2021) currently under Regulatory review did not include the previously supplied historic information because the Supplementary RIW was proposing additional sampling based on current data derived from the sampling conducted in accordance with the NJDEP/EPA approved workplan (approved on June 8, 2018).

Per your request, the above historic information will be included with the final RIR for AOC 12.

The following maps were provided with the October 25, 2017 RTC for the original AOC 12 RIW:

- Smith Creek Cross-Section
- Smith Creek proposed sediment & surface water location sample map – also depicting historic soil boring locations and historic temporary well locations

**NJDEP Comment 10:** There will not be a Class IIB aquifer reclassification for this site as previously discussed in the CSM comments. Chloride (> 3,000 mg/L) or TDS (> 5,000 mg/L) data may be presented to determine if a Class IIIB aquifer classification is applicable for all or some of the aquifer units. Elevated chloride and TDS must be due to natural conditions – not due to site impacts, releases, or processes – to be considered Class IIIB. Regardless of classification, sources of ground water contamination require remediation consistent with the TRSR and the Remediation Standards.

**Earth Systems/Hess Response 10**: Noted.

**NJDEP Comment 11:** Soil boring samples at SC-2 and SC-3 identified EPH over residential standards and ecological screening levels. Step out sampling around these discrete locations is proposed. Based on the sample locations within the historic LNAPL impact area from the 1969 crude oil release, additional investigation of the entire area between the southern property line dike and the PSE&G access road is recommended to assess LNAPL impacts. Please see highlighted area below from 1972 photo (post dike construction) and the same area in the 1969 photo. Furthermore, please refer to the ecological- specific comments for further details.

**Earth Systems/Hess Response 11**: Please see Response 20 for additional proposed sampling. In addition, soil samples will also be collected for grain size in order to calculate a site-specific EPH criteria.

**NJDEP Comment 12:** A general description of site geology is provided. The CSM includes cross-sections based on formation type. Cross-sections through the investigation area that reflect ground surface elevations changes, boring log lithology, transmissive zones that would influence ground water flow and contaminant migration,

with well completion intervals, surface water body limits, pipelines, COC isopleths, etc. are requested.

**Earth Systems/Hess Response 12**: The requested cross sections will be provided as part of the final RIR.

**NJDEP Comment 13:** The sediment investigation section stated that no signs of LNAPL or a sheen were observed in any sediment cores, while odors, some staining and elevated PID readings were observed in several cores. This is not consistent with following sediment log descriptions. Please clarify this discrepancy.

a. Detention Basin – SB-logs: SB-1, SB-2, SB-4, SB-6 included descriptions of "petroleum-like substance". These locations need to be highlighted on figures.

**Earth System/Hess Response 13a** – Historic boring logs and boring logs from the work proposed in this RIW will be reviewed and summarized in the RIR. The logs will be reviewed in conjunction with analytical data to determine if field observations are based on potential petroleum impacts or due to organic media.

Regarding the above specified locations, these locations will be highlighted on a figure and included with the final RIR. Based on analytical results for sediment samples collected in the detention basin, there are indications of petroleum impacts and additional investigation is recommended. Once the proposed adjacent wetland samples are collected, potential migration paths will be evaluated regarding the detention basin and additional sediment sampling proposed, if necessary.

b. Smith Creek Pond and Smith Creek – SS-logs:

- Elevated PID: SS-25 (up to 900 ppm), SS-28 (up to 362 ppm), SS-29 (up to 78), SS-30 (up to 236 ppm), SS-31 (up to 108 ppm), SS-33 (up to 195 ppm).

- Sheen: SS-20, SS-21, SS-29 (sheen, globules, petroleum like odor)

**Earth System/Hess Response 13b** – See Response 29 regarding field observations for borings in Smith Creek Pond and Smith Creek.

**Earth Systems/Hess Response 13**: See above.

**NJDEP Comment 14:** Section 7 states that once the off-site ground water investigation is complete, the analytical results will be evaluated to determine the potential sources. Potential sources and migration paths must be considered when establishing the sample locations.

**Earth Systems/Hess Response 14**: Potential sources and migration paths have been considered when choosing the proposed sample locations. The point of the above statement was to acknowledge that as additional analytical results are obtained and evaluated, a determination will be made if there are potential off-site source impacts present, unrelated to former Hess operations or releases.

**NJDEP Comment 15:** Ground water impacts at the southern site perimeter wells (e.g., along the dike and near the aeration basins) are associated with plume migration from on-site source areas. The four monitor well clusters installed off-site were the first wells installed to assess off- site ground water quality and potential off-site receptor impacts. Furthermore, a limited supplemental ground water remediation investigation is proposed. Delineation of shallow ground water contamination at SC-1 and SC-2 is proposed by installation of SC-5 and SC-6. Additional information for the basis of these well locations is requested considering the low levels of COCs identified at SC-1 and SC-2, and water quality at SC-4. The well locations should be evaluated with additional information. Please provide the following:

a. Proposed well locations, existing shallow well locations and ground water contours representing synoptic ground water and surface water gauging events at peak high tide and peak low tide flow.

b. Tidal influence evaluation at the SC-, PER- and AB-wells (all aquifer intervals at well clusters) to determine if tidal stage should influence ground water sampling.

c. Any preliminary water quality data from the Truck Loading Rack RMU RI, particularly from within the AOC 57 Day Tank Field area.

d. Pipeline locations and construction.

**Earth Systems/Hess Response 15**: The well locations were proposed based on drilling constraints in the area. Due to overhead lines, localized flooding, and vegetation, there are minimal areas that are accessible for drilling purposes. The locations were proposed since they are both accessible and importantly will complete delineation for the low levels of impacts detected in the SC well clusters.

The above requested information will be compiled as part of the ongoing RI of AOC 12 and the information included in the final AOC 12 RIR.

**NJDEP Comment 16:** Former Site Operations: The former filter backwash lagoon location on figures is not accurate based on aerial photos – the lagoon partially aligns with the TK-1911 basin.

**Earth Systems/Hess Response 16**: Please see the attached **Figure 1** which depicts the former filter backwash lagoon in the location specified above.

**NJDEP Comment 17:** The Location of AOC 78 connection to the Detention Basin/Smith Creek needs to be shown:

**Earth Systems/Hess Response 17**: The location of AOC 78 has been included on the attached **Figure 1**.

**NJDEP Comment 18:** Please consider the following information in future remedial work:

a. AOC 12 Smith Creek and Detention Basin: The current detention basin dimensions are approximately 800' x 600' and 5-6' in depth. Aerial photos (1957-present) showed that the current detention basin area and represented changes

that began circa 1963 including: 1) restriction of the connection of on-site Smith Creek/wetland areas to off-site Smith Creek circa 1963-66; and 2) changes to facility stormwater management and treatment in conjunction with the complete separation of the site from Smith Creek after construction of the dike and Smith Creek Pond.

b. The entire LNAPL impact area footprint needs to be considered in sampling plans: 1969 AST failure LNAPL impact areas:

c. The 1969 AST failure released 8,000,000 gallons of crude oil. An estimated 1,000,000 gallons escaped the AST dike. The New York Times article (below, highlighting added) summarized the release and initial response actions. The description indicates surface water impacts beyond Smith Creek:

**Earth Systems/Hess Response 18**: The Supplemental RIW (2021) summarizes the analytical results obtained from the approved 2016 RIW for AOC 12. The above issues were discussed several times during the approval process for the original 2016 RIW. For example, additional sample locations were added (SC clusters) and a depth of 10 feet was proposed for sediment borings due to discussions conducted regarding the above topics. The above information will also be included in the final RIR for AOC 12.

**NJDEP Comment 19:** The revisions in the new report (2021) addressed some of the Department's concerns on the ESNRs' historical impacts. This AOC remains deficient in identifying and describing the historic and current pathways (e.g., other AOCs impacting the area by erosional features and groundwater). Please include more detail explanations in the Remedial Investigation Report, which will include a revised Ecological Evaluation, on the following:

a. Riparian grant information that was not found in this report.

b. Description of historical and current pathways accounting for erosional features and overland flow.

c. Please confirm that historically there was only one outfall that discharged into the detention basin. Currently the outfall is capped with a concrete plug. It is not clear in the report if draft comment #2 from the previous 2020 comment letter was addressed.

d. Please indicate if the proposed samples are located where the mini lagoon used to connect to the detention basin and the American Petroleum Institute separator.

e. Most of the groundwater wells for AOC 12 were installed in 2013 or later. The impacts from groundwater plumes, during the last half century of operation, could have impacted the detention basin and/or the former Smith Creek. AOCs near the detention basin, with historically contaminated groundwater, need to be identified and discussed. If the sediment sampling has not been addressed to target those potential discharges, then additional investigations in those areas will be necessary.

**Earth Systems/Hess Response 19**: The above requested information will be addressed in the final RIR, as appropriate.

**NJDEP Comment 20:** The historical location of Smith Creek, which previously was open water that was filled/altered and became a marsh or a vegetated area (an ESNR), needs to be investigated. The Department recommends the following locations need to have additional samples taken.

1. The figure below displays the area south of the road. Please collect a minimum of two samples where the former Smith Creek used to be.

b. Please include a minimum of four additional samples in between the proposed sample locations. Please note the proposed samples are approximately 150 to 200 feet apart.

**Earth Systems/Hess Response 20**: Additional samples have been proposed based on the above comments and discussions had during the April 27, 2022 site meeting. Please note that we have revised the location of the pipeline on the southern boundary of the Site. Also, as observed during the NJDEP's Site visit, the southern portion of the Site is a challenging area to collect samples due to the presence of pipelines, the urban sewer, and localized flooding. In addition, the adjacent off-site area owned by PSE&G is also a challenging area to collect samples from due to localized flooding, vegetation, pipelines, and overhead power lines.

We believe that the proposed sample locations depicted on the attached **Figure 1** will address the above NJDEP comments and will provide the necessary data from locations that are safe and accessible.

**NJDEP Comment 21:** Please include additional information on the sitewide utility/outfall (yellow hash line). Furthermore, please provide additional information on this feature, connection, and type of discharges.

**Earth Systems/Hess Response 21**: Historic records will be reviewed, and any available information obtained will be included with the final RIR.

**NJDEP Comment 22:** AOC 13 was incorporated into the Former Site Operations Section as a migration pathway. There are 2 proposed samples near or on the former location of AOC 13. Please provide additional information on how the sample locations were selected. The non-ESNRs portion of AOC 13 will need to be addressed in future investigations.

**Earth Systems/Hess Response 22**: AOC 13 is the Former Oily Water Lagoon and an AOC-specific RIW was prepared for this AOC and submitted in August 2022.

In the 2021 Supplementary RIW, samples are proposed to be collected from the wetland areas adjacent to the detention basin. The proposed sample locations surround the entire detention basin and should yield representative data for the entire area and identify any potential migration pathways.

**NJDEP Comment 23:** The proposed sampling maps do not address the historical and current swales and/or erosional features leading to the detention basin. It is recommended to collect a minimum of 2-3 samples per feature (Ecological Evaluation Technical Guidance Section (EETG) 5.3.2.2).

**Earth Systems/Hess Response 23**: As explained above in Response 22, the proposed wetlands sample locations surround the entire detention basin and should yield representative data for the entire area and identify any potential migration pathways. The detention basin area will be inspected prior sampling to determine if any erosional areas are identified that have not been previously identified. If an erosional area is observed, 2-3 samples will be collected from the area.

**NJDEP Comment 24:** Please provide additional information on the underground utility line/outfall located in the west area of the detention basin. In addition, at least 2-3 sediment samples need to be collected at the end of the outfall, upgradient and downgradient.

**Earth Systems/Hess Response 24**: Historic records will be reviewed to determine if there is any additional information known about the specified outfall. The information will then be included in the final RIR. An additional sediment sample will be collected at the end of the outfall (see **Figure 1**). Please note that the sediment samples collected in 2018 are upgradient (SB-2) and downgradient (SB-4) of the outfall.

**NJDEP Comment 25:** Please provide justification for not collecting all the VOC data at the 6–12-inch sample interval, in accordance with the Ecological Evaluation Technical Guidance.

**Earth Systems/Hess Response 25**: The sediment samples collected from Smith Creek were inadvertently collected at the 0–6-inch interval, instead of the 6–12-inch interval. However, multiple sediment samples were collected from each boring at several depths and analyzed for VOCs, so the data is still considered representative. In addition, supplementary sediment sampling is proposed in the 2021 RIW for Smith Creek. The samples proposed in the 2021 Supplementary RIW will all be collected at the 6–12-inch interval for VOC analysis. This data will be evaluated in conjunction with the historic data to determine if additional sediment sampling for VOC analysis is required in Smith Creek.

**NJDEP Comment 26:** The report did not indicate if samples were collected in the locations where photos No. #3 and #5 (appendix E) were taken. If sediment samples were not collected, then please take sediment samples at those locations, or provide adequate justification for not addressing an area potentially impacted by contaminants.

**Earth Systems/Hess Response 26**: A sample was proposed in the location of Photo #5 in the supplementary RIW. However, a sample was not proposed for Photo #3. An additional sample has been added to this location, see **Figure 1**.

**NJDEP Comment 27:** Please include a photo location map.

**Earth Systems/Hess Response 27**: GPS coordinates were not collected for historically taken photos. Going forward, a photo location map will be included with all reports, if applicable.

**NJDEP Comment 28:** Section 6.0- Ecological Evaluation (pg. 38): This section indicates that a stand-alone and site-wide Ecological Evaluation Report will be prepared. Please note that a site-wide Ecological Conceptual Site Model has been requested by the Department. The ecological evaluations will be individually submitted as part of each AOC group Remedial Investigation Report, pursuant to N.J.A.C. 7:26E-4.8. All the previous

comments regarding the Ecological Evaluations need to be incorporated into the RIR. Please note, this document did not contain the original EE submitted with the RIWP dated 2020.

**Earth Systems/Hess Response 28**: Earth Systems/Hess acknowledges that the NJDEP has requested an Ecological CSM and this report is currently in process.

**NJDEP Comment 29:** Section 6.1: Sediment investigation states "No signs of LNAPL or a sheen were observed in any of the sediment cores. Odors, some staining, and elevated PID readings were observed in several sediment cores." Please note that odor, staining, EPH/TPH concentrations and elevated PID are lines of evidence identifying the presence of free and residual product. In addition, rainbow sheen was found in the boring sleeves of several cores.

**Earth Systems/Hess Response 29**: Due to the organic nature of sediment present in Smith Creek, a sheen, odors, and staining may be observed that is unrelated to petroleum impacts. In addition, black silty material was also encountered which can also lead to misleading observations in the field. Therefore, boring logs were evaluated in conjunction with analytical results to determine if any field observations were actually indicative of free and/or residual product being present in Smith Creek and/or Smith Creek Pond. Based on the analytical results, free or residual product is not present in the sediments of Smith Creek Pond or Smith Creek. Please see below for a summary of EPH concentrations for sediment samples collected in Smith Creek Pond and Smith Creek:

- A total of 39 sediment samples were collected from Smith Creek and Smith Creek pond and EPH concentrations ranged from ND to 821 mg/kg

Based on elevated EPH concentrations detected in the detention basin, additional evaluation of potential petroleum impacts present in the detention basin will continue to be evaluated as part of the ongoing RI.

**NJDEP Comment 30:** Section 7.2: Supplementary Ecological Investigation, Wetland Soil Sampling- Please note that other wetlands samples not located in AOC 12 will be investigated in other reports and are not part of this AOC. There is not sufficient information to comment if the location is appropriate. The migration pathway evaluation has not been conducted. This evaluation is usually conducted in the Remedial Investigation phase of those AOCs.

**Earth Systems/Hess Response 30**: Noted. The proposed wetland sample analytical results will be discussed in the Sitewide Ecological Evaluation (EE) and/or individual AOC reports. We acknowledge that the sample locations outside of AOC 12 have not been approved by the NJDEP as part of this workplan.

**NJDEP Comment 31:** On page 28 and page 34: the report states "Based on comments provided in the June 9, 2020, BEERA comment letter, the NJDEP requested that the deeper sediment results also be compared to the applicable ESC. However, the ESC should only be used to evaluate potentially negative effects in the biologically active zone. The LSRP does not agree that the data comparison is valid, but the review was conducted, as requested." The human- health based Soil Remediation Standards, do not apply to sediments. Moreover, the EETG, section 5.4, states that all individual sample

data should be compared with the ESC, and, pursuant to N.J.A.C. 7:26E-4.8, horizontal and vertical delineation to the ESC is required. The ecological receptor would be the most impacted by the contaminated sediments. The changes in the sediments from erosion or accretion over time, potential dredging, the fate and transport of the contaminants, and the potential presence of free and/or residual product on this site are important reasons for the need to compare the data to the ESC. The Department appreciates that the LSRP decided to add the ESC to the tables as per NJAC 7:26E.

**Earth Systems/Hess Response 31**: No response is required to this comment.

**NJDEP Comment 32:** The SC samples are located near or on the ESNRs. Please note that these soil sample locations need to be evaluated as a potential migration pathway to the ESNR or if located in an ESNR will need to be compared to 1,700 mg of EPH/ kg and delineated properly.

**Earth Systems/Hess Response 32**: The planned SC delineation samples were proposed due to initial soil sample results exceeding the ecological screening criteria of 1,700 mg/kg during the original round of sampling. Therefore, the proposed additional delineation SC samples will also be evaluated utilizing the specified screening criteria (1,700 mg/kg) and further delineation conducted if necessary.

**NJDEP Comment 33:** Sediment sample locations need to be added where historical groundwater plumes were located, and a description will need to be incorporated in the text.

**Earth Systems/Hess Response 33**: Proposed sediment locations will be evaluated to determine their proximity to known impacted Site monitoring wells/groundwater plumes and the sediment sampling locations adjusted if necessary. Actual sediment results and a discussion of current groundwater sample results will be included in the final RIR.

Should you have any questions or require additional clarification or information, please contact me at 732-739-6444 or via e-mail at ablake@earthsys.net. If you have any questions relating to the project and schedule moving forward, you can also contact Mr. John Schenkewitz of Hess Corporation at 609-406-3969.

Sincerely,

Amy Blake
Sr. Project Manager

c. Ms. Julia Galayda, NJDEP Case Manager (via email/Sharefile)
Mr. John Schenkewitz – Hess Corporation (via e-mail)
Mr. Shawn Ryan – Earth Systems (via e-mail)
Mr. John Virgie – Earth Systems (via e-mail)

AOC 78

AOC 13 - Former Filter Backwash Lagoon

Photo #3 Location

Photo #5 Location

NOTES:
1. TransCon Marker, Urban Sewer Manhole, Urban Sewer Cleanout, and Potential Sample Location poins taken on 5/5/2022 using a handheld Trimble Geo7x. All points honed and corrected using GPS Pathfinder Office Differential Correction. Base Provider: CORS, VALHALLA (NYVH), NEW YORK (ITRF00 (1997)-Derived from IGS08), Integrity Index:93.79, 43mi

0 90 180 360 540 720 Feet

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Geological Survey contractor was Quantum Spatial, Inc.

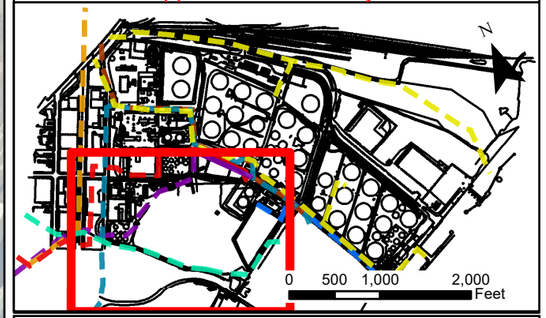
## LEGEND

- 2021 Proposed RIW Sample Locations
- 2022 Proposed Additional Sample Location (RTC)
- TransCon Pipeline Markout
- Urban Sewer Manhole
- Urban Sewer Cleanout
- Urban Sewer Outfall
- Detention Basin Inlet
- AOC 78
- 20' Buffer of TransCon Pipeline
- Former Smith Creek Channel
- Former Filter Backwash Lagoon

**Urban Sewer**
- Assumed Urban Sewer Location
- Known Urban Sewer Location

**Pipelines**
- Buckeye Petroleum Pipeline - 608
- TransContinental Pipeline

*Note that sediment/surface water sample locations are depicted on Figure 13 2021 Supplemental RIW only.




# FIGURE: 1
# AOC 12
# Proposed Additional Sample Locations

**HESS CORPORATION**
**FORMER PORT READING COMPLEX**
**750 CLIFF ROAD**
**PORT READING, NEW JERSEY**

| | | | |
|---|---|---|---|
| **Project #:** | 1114J01 | **Date:** | 10/24/2022 |
| **SRP PI#:** | 006148 | **Drawn By:** | RC |

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